

# THE EDDY CURRENT.

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NO 27.

## PECOS VALLEY SUGAR.

A Description of How it Will be Manufactured—Extracting Sugar From the Beets.

It is safe to say that every person in the valley, and especially in the vicinity of Eddy, are vitally interested in the beet sugar factory to be erected here and everything that pertains thereto. It is also a reasonably safe proposition that very few people of the valley have ever seen a sugar manufactory or are acquainted with its workings. Therefore it follows that a brief description of the processes by which the saccharine matter is abstracted from the beets and converted into sugar will not be without interest.

The beets are brought to the factory in railroad cars and put on a special track in the rear of the factory. Along the track on which the car, loaded with beets, are standing runs a canal, in which beets drop when needed, according to the wants of the factory. A rapid stream of water flows then along, soaking and washing as they go, until they reach the building. Here they are dropped into a wheel, where the water is separated from the beets and flows into the river. The beets without the water are elevated by the wheel, which, to this effect is provided with buckets. Entering the buckets at the bottom, the beets are lifted by means of the rotary motion of the wheel and dropped inside an immense cylinder, which gives them many whirls in water and drops them out at the elevated end.

They drop off clean into a chute which carries them into a perpendicular elevator with buckets which carries the beets to the top of the main room, where a chute conducts them into the mill which cuts them, a ton in three minutes, into little corrugated strips as large as a hen's quill, and two to four inches long. These strips are called cossettes, a technical French name which answers as well as any. If ground fine or into thin shavings, they would pack in diffusion cell and not let the water run through freely. Next the diffusion cells, four and one-half feet in diameter and ten feet high, and holding one ton of pulped beets. Twelve of these cells arranged and connected with each other is called a diffusion battery. Just as several cups set in galvanic electricity are called a battery.

The successive cells are numbered one, two, three, four, etc. Each cell has a stop or cover which can be turned to one side or be closed air tight when put in place with rubber under the outer rim and brought down with a powerful clasp screw. The flat bottom is similarly closed, but has a false bottom a little above it—a strong copper plate full of fine holes. A metal water pipe enters the top just below the cover. Another similar pipe below runs out from the open space between the bottom and the perforated false bottom. This ascends and enters the top of cell number two, and in doing so passes through a steam pipe or chest. From number two a similar pipe runs to number three, and so on through any number of cells in the battery. The tops of the cells being opened, they are filled with the cossettes or strips of beets, and the covers are fastened down. Hot water is then let in through the pipe, the required pressure being obtained by pinching the water tank at any desired height.

As will be seen the hot water passes down through the contents of cell number one, then out at the bottom and up over into the top of cell number two, and down through its contents, and so on through the other cells. The water being cooled in passing through the material, is heated in the steam chest. In practice thermometers on these indicate by a dial on the outside when the liquid is of the desired temperature, and the attendant turns the steam on or off from any steam chest as needed. The same water passes through all the cells, often obtaining all the sugar it can dissolve before reaching the last one. By the time ten successive waters have passed through cell number one, all the sugar is extracted. Its bottom is opened, the exhausted cossettes are dropped into a large receptacle below and new material is put in. The fresh water inlet pipe is changed to number two, and number one becomes number twelve, or the last of the series, the exhausted juices leaving this. Cell number two having already had eleven doses of water passed through it, the first supply of fresh water passing through it removes its last vestige of sugar.

It is then refilled with fresh pulp, and becomes number twelve of the series number one becoming number eleven. So the process goes on, round and round. The sugar-saturated liquid from the diffusion battery and its receiving tank, is carried into great tall tanks, in which the sweet liquid is mixed with milk of lime, which unites with and destroys native acids in the beets and other impurities. After awhile the carbonic acid gas which was caught from the kilns which burn the lime in the building to make the milk of lime with, is let in through the liquid, and unites with and solidifies any excess of lime not already solidified. The liquid is then carried off into the filter room, where it passes through

a remarkable series of filters, which remove the lime and other impurities. The clear liquid looking like thin molasses then flows down into shorter tanks, where a little more lime is added to remove any acids escaping the first filtering. It is then pumped to a clean set of filters in the filtering room, and comes back into the main room to be pumped as required into the great condensing boilers, three in number. The great air-pump removes the air and steam produced inside of the third boiler, creating in itself and the two preceding boilers a gradually decreasing vacuum, so that the liquid boils down very rapidly and at a low temperature. After partial condensation the liquid passes to the second for further concentration, and finally into the third.

The heat and pressure of each succeeding boiler is regulated to the increasing density of the syrup. From the last condenser the concentrated syrup passes into large reservoir tanks, and is next pumped into the "vacuum pans," which are really great air tight, upright cylinders, from which air pump exhausts the rising steam. In these vacuum pans the syrup becomes a thick mass of sugar crystals and molasses. From these, mixers carry the mass and drop it into the "centrifugals." These are iron cylinders, two feet high and three feet in diameter, the outer rim covered with fine brass wire cloth. Pans are working while the others are being emptied and re-supplied. They revolve about 1,200 times a minute, the outer rim traveling 9,500 feet a minute. The sugar flies against the outside, and in two or three minutes all the molasses is thrown through the wire gauze, and drops into a receptacle below, to be further treated and concentrated, and to produce another lot of crystallized sugar.

The sugar, now white, is sprayed with a forcible jet of mixed air and cold water, all of which flies through the gauze, leaving the sugar a mass of white grains, a little damp. The sugar is dropped into a receptacle below, whence it is taken by a screw elevator into the drying room.

Here is a thirty foot long revolving cylinder, six or six feet in diameter, sloping downward. Its inner surface is full of little shelves, while in the center is a smaller cylinder kept warm with steam inside of it. As the sugar is brought up from the centrifugals, it drops into the elevated end of the great cylinder. It is picked up by the little shelves, and when they come around to the top (as the cylinder slowly revolves) they drop the sugar off upon the inner warm cylinder, which dries it, and it falls off to be picked up by other shelves and carried up again, as the cylinder stands sloping the dry sugar works down towards the far open end. This end terminates in a rim of fine brass wire, next to which is one of a coarser mesh. All the fine grain sugar, composing a great deal of it, now entirely dry, falls through the fine wire and goes down a chute into barrels or bags in the shipping rooms below. The next grade in fineness passes through the next screen, and falls down another chute. The coarsest grains fall out of the end into a third chute. When packed the product is weighed and is then ready to put on the market.

An interesting arrangement is the current of air sucked through the long cylinder from the far end, which takes up moist vapor from the drying sugar and some fine sugar dust. This air is driven through a long room with partitions nearly across, first from one side and then from the other, twenty or thirty of them. These check and cool the current of air, and all the fine sugar dust drops on the floor as pass sugar floor. It is usually re-dissolved and concentrated and crystallized into coarser grains through the centrifugals. No nothing is lost. Even the molasses is mainly worked into sugar unless it shall be worth more in the syrup form.

The above description was furnished by Engineer Saich and was printed in the Argus a couple of weeks ago.

## Pecos Valley Railway Co. and Pecos River Railroad Co.

Time Table No. 14.

To take effect Wednesday, May 6th, 1896, at 12:01 o'clock a. m.

Standard Central Time.

North End	STATIONS.	South End
1:00 a. m.	Leave Pecos	1:00 p. m.
1:15 a. m.	Reas	1:15 p. m.
1:30 a. m.	Louisa	1:30 p. m.
1:45 a. m.	Armo	1:45 p. m.
2:00 a. m.	Sierra	2:00 p. m.
2:15 a. m.	Goodnight	2:15 p. m.
2:30 a. m.	Palmer	2:30 p. m.
2:45 a. m.	Red Lion	2:45 p. m.
3:00 a. m.	Red Bluff	3:00 p. m.
3:15 a. m.	Malaga	3:15 p. m.
3:30 a. m.	Parsons	3:30 p. m.
3:45 a. m.	France	3:45 p. m.
4:00 a. m.	Orla	4:00 p. m.
4:15 a. m.	Bely	4:15 p. m.
4:30 a. m.	Lake View	4:30 p. m.
4:45 a. m.	McNitt	4:45 p. m.
5:00 a. m.	Pecos	5:00 p. m.
5:15 a. m.	Miller	5:15 p. m.
5:30 a. m.	Jack Arroyo	5:30 p. m.
5:45 a. m.	Guadalupe	5:45 p. m.
6:00 a. m.	Goodnight	6:00 p. m.
6:15 a. m.	Palmer	6:15 p. m.
6:30 a. m.	Sierra	6:30 p. m.
6:45 a. m.	Armo	6:45 p. m.
7:00 a. m.	Reas	7:00 p. m.
7:15 a. m.	Leave Pecos	7:15 p. m.

## BITTING'S...

### HEADQUARTERS

For this Part Of The Earth.

For Everything at Fair Figures Go To

Don't you be the last person In the World To Find Out Where The Best Goods Are Sold Cheap.

## FRUIT & FLOWERS

### TRAPPING THE CURCULIO.

A Detailed Account of Just How This May Be Accomplished by Jarring.

The jarring process is very simple as explained by Mr. S. D. Willard in a communication to Rural New Yorker:

Provide a tool as shown in Fig. 1, which is an ordinary hoe handle, at the end of which is a light, hard wood block, the upper part of which is made concave, so as to permit being filled with cotton, and then tightly covered with leather of some kind. It must be soft, so as to do no injury to the bark of the tree when used as a pounder to jar it. No. 2 represents a frame that may be made of 2 1/2 by 1 1/2 inch pine, notched and nailed together at C, with a distance from A to B of about 9 feet and from B to D about 4 1/2 feet. A crossbar of the same width and thickness is notched and tightly nailed at the points B and D. Upon the frame thus made stretch and tack a piece of factory cloth, 3 yards long and 1 1/2 yards wide. Provide yourself with two of these frames. Have a boy carry one, and with the other in your own hands, and the pounder, you are ready for business.

Drop the frames under the tree with the sheet side up, so that the tree may be about opposite the point C of the

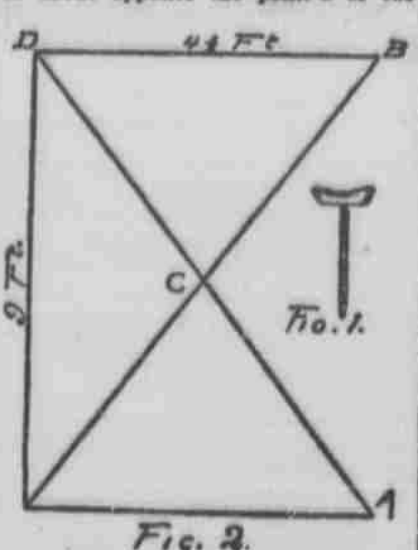


Fig. 2.

### TOOLS FOR JARRING THE CURCULIO.

sheets. You then have the ground beneath the tree covered for about nine feet in each direction. A sudden blow on a few of the larger limbs, if the tree is large, or one blow on the body, if the tree is small, will cause the curculios to drop upon the sheets, from which they may be picked at once and destroyed. A few hours' experience will enable any eye to detect them at once. Two or three minutes will suffice at any tree; hence a large number of trees can be run over in a day.

The work should begin as soon as the fruit is formed and be followed for two or three weeks, at first daily or until it is evident that the number of insects is being greatly reduced, so that only a few are found, when it may be safe to do it only alternate days. The insects usually begin their work on the outside of an orchard, especially if there be a nearby belt of timber. Hence we begin to hunt them first on the outskirts.

Would Not Use the Plum on Peach. T. T. Lyon of Michigan expresses himself as follows on a subject of widespread interest in a communication to Rural New Yorker:

With the domestics and northern Americans there is, in my opinion, never an advantage, but a disadvantage rather, in the use of peach stocks for the plum. This method of propagation is believed to be but little practiced at the north. It prevails rather in the more southern localities, in which the Chickasaw and the more southerly strains of Americans are mostly grown. These possess peculiar characteristics more nearly akin to those of the peach, upon which they are, therefore, probably more generally successful. Even in such cases, however, there is much reason for the assumption that even the southern varieties of plums would be more perfectly "at home" upon stocks of their own species, and it may be reasonably

suspected that peach stocks are in general use at the south mainly because they are more readily obtained. At the north I would in no case use plum trees grown on peach stocks, except possibly to be planted in very light, dry soils, in which the peach stocks would be more at home. The short lived character of the peach, and its liability to the attacks of yellow, borers and other maladies, are serious objections to such practice, at least at the north.

### Odd Mention.

H. A. Siebrecht would choose the following vines for a rustic arbor: Wistaria chinensis, Tecoma praecox, the new improved trumpet vine; Aristolochia siphia, Dutchman's pipe; Clematis paniculata, new and superb; Lonicera halleana, ever blooming honeysuckle.

"We know of no other summer bedding or house plant more liberally or more distinctly variegated than the comparatively new abutilon, Souvenir de Bonn," says Rural New Yorker. In some places, particularly along the Hudson, blackberries are trained on wires, after the manner of grapes. The two wire trellis is generally preferred. The New England Homestead reports a big record for the new peach Crosby. It originated in New England and has thus far proved to be the hardiest peach ever grown in that trying climate.

Among deciduous trees the value of the honey locust and swamp orange for hedging is well known. The hemlock spruce and arbutus are also in much request among evergreen trees. Menhaden's Monthly says that the Norway spruce is equally good, though not so often seen.

### Letting the People Know.

When you reduce advertising to its lowest terms, it is merely letting people know that you are in business, what kind of business it is, how you can serve them, and that you want their trade.—C. A. Bates.

Mr. Henderson lays down this rule: "The shoot or stock to be budded upon must be in a thrifty growing state, so that the bark can be raised freely from the wood, and the bud to be inserted must be in such a state that it shows prominently at the axil of the leaf."

For a "house mixture" of fertilizers for strawberry Rural New Yorker says there is nothing better, all things considered, than muriate of potash one part and ground bone three parts.

### Cost of Running Boston.

The lighting of the city in charge of the lamp department called for \$582,800, and the library for an even \$176,000; \$130,000 went for the overhauling of the poor, and \$130,000 was charged against the parks. To preserve order in the city through the police department cost \$1,400,000, of which over \$71,000 was for pensions. To the school committee was appropriated \$1,920,000, and \$210,000 in addition went for school-houses. Other public buildings called for \$170,000, and the great street department, with its many divisions, had \$1,055,000 appropriated for its use. City debt requirements footed up \$2,800,704. These were the principal appropriations, the smaller ones bringing the amount up to a grand total of \$14,013,043—truly an income for a principality.

A Good Tree For Street Planting. The glinkgo, or maidenhair tree, is one of the very best, is first class. The only objection is the bad odor the fruit has when matured. "This tree is not known in a wild state and is considered a relic of prehistoric ages, a sole remnant of a race. In Japan there are trees of it about the temples that are several feet in diameter and 100 feet high. It is excellent for a city, as it stands the smoke and dust well, holds its foliage late, is a healthy tree and insects avoid it, as they also do the winged elm.

### For the Wise.

To advertise or not to advertise—that is the question. Whether 'tis better in a business man to suffer the loss and shame of unthought bargains, or, by advertising, sell them. There's the nightmare of neglected opportunity.

Of space unoccupied in the public press—that might enrich the merchant's pocket by emptying his pithier's shelves.—All these, and other things to prize. Should lead the wise to advertise.—Business Traveler.

We mark them Low to sell them Quick. All Prices at the Low Water Mark. No question about you being highly pleased with these goods and prices.

Come in and see our Complete assortment of New Styles in

Dry Goods, Clothing, Gents' Furnishing Goods, Shoes, Hats, Gloves, Ladies' Shirt Waists.

## BITTING'S

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R. H. PIERCE, President, S. T. BITTING Vice President C. E. Conway, Cashier

## First National Bank, OF EDDY, N. M.

DIRECTORS.

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